

Sheet List

Block diagram



File: Block.kicad_sch

Power



File: Power.kicad_sch

MCU



File: MCU.kicad_sch

Audio and Misc



File: Audio.kicad_sch

Update History

Rev.No	Date	Comments
A1	2020-06-17	First revision.
A2	2020-07-05	Disconnect with VBUS to U1-P3(VDD1).
B1	2020-07-23	Change power structure to followings. - isolated(5V-5V) - DC/DC(5V-3.3V) - LDO(5V-3.3V) Change main MCU. (STM32F722RET -> STM32H750VBT)
B2	2020-08-25	Change Display interface to SPI.
C1	2020-10-01	Changed DAC. (PCM1774 -> WM8960)
C2	2021-02-06	Changed main MCU to 144pin model. (STM32F722RET -> STM32H723ZGT6) Changed MCU Voltage to 1.8V.
D1	2021-04-03	Divided into "main board" and "LCD board".
D2	2021-04-10	Modified M2 hole position. Divided into multiple sheets.
E1	2022-01-22	Kicad6.0にアップデート 基板形状の見直し 2次側の電源ICを変更 1.8V TPS62161DSG 3.3VD TLV76733DRV 3.3VA NCP711 リセットICをNCP303に変更 LCD基板へのコネクタピン数を変更
E2	2022-11-12	SWD端子にTVSダイオード追加 PSRAM追加 MIDI IN追加 UARTデバッグ端子削除 ハードウェアバージョン認識ピン追加
E3	2022-11-14	MIDI RXピンをPE7->PF6に変更
E4	2022-11-29	回路の変更なし GNDペタ形状・部品配置を調整
E5	2023-01-03	回路の変更なし 部品配置を調整

CureSynth mini main board

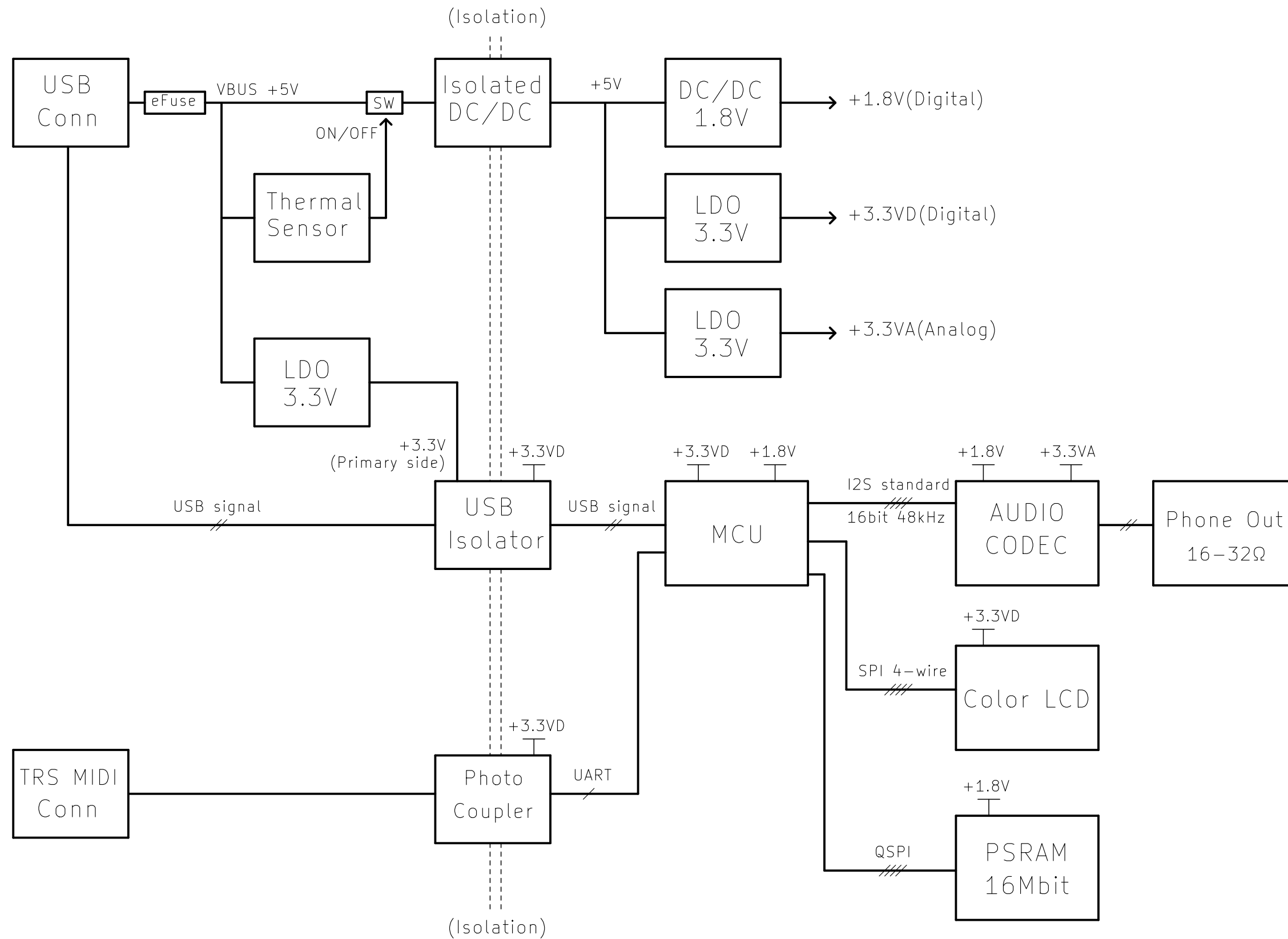
Sheet: 1/5

Date: 2023-01-03 (Rev:E5)

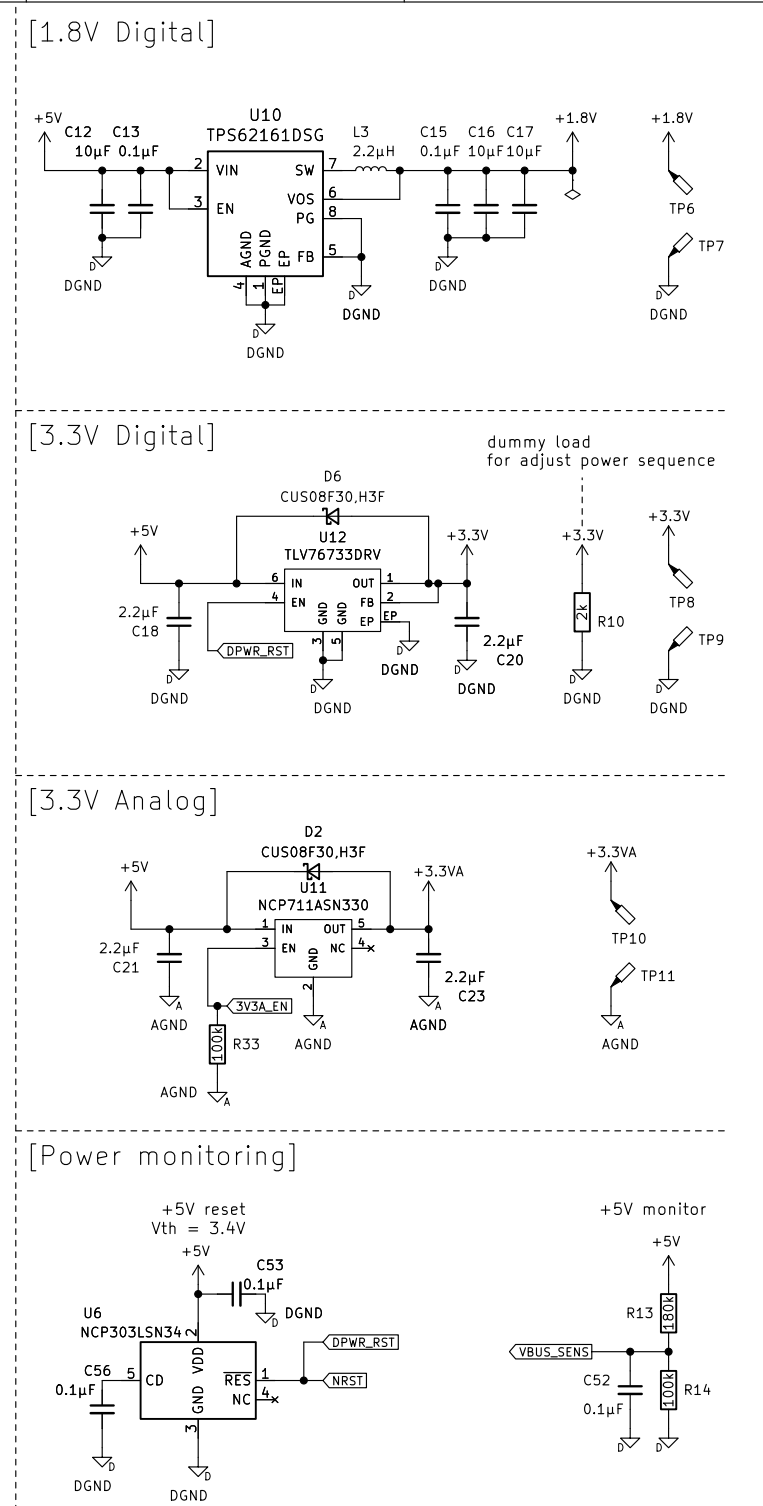
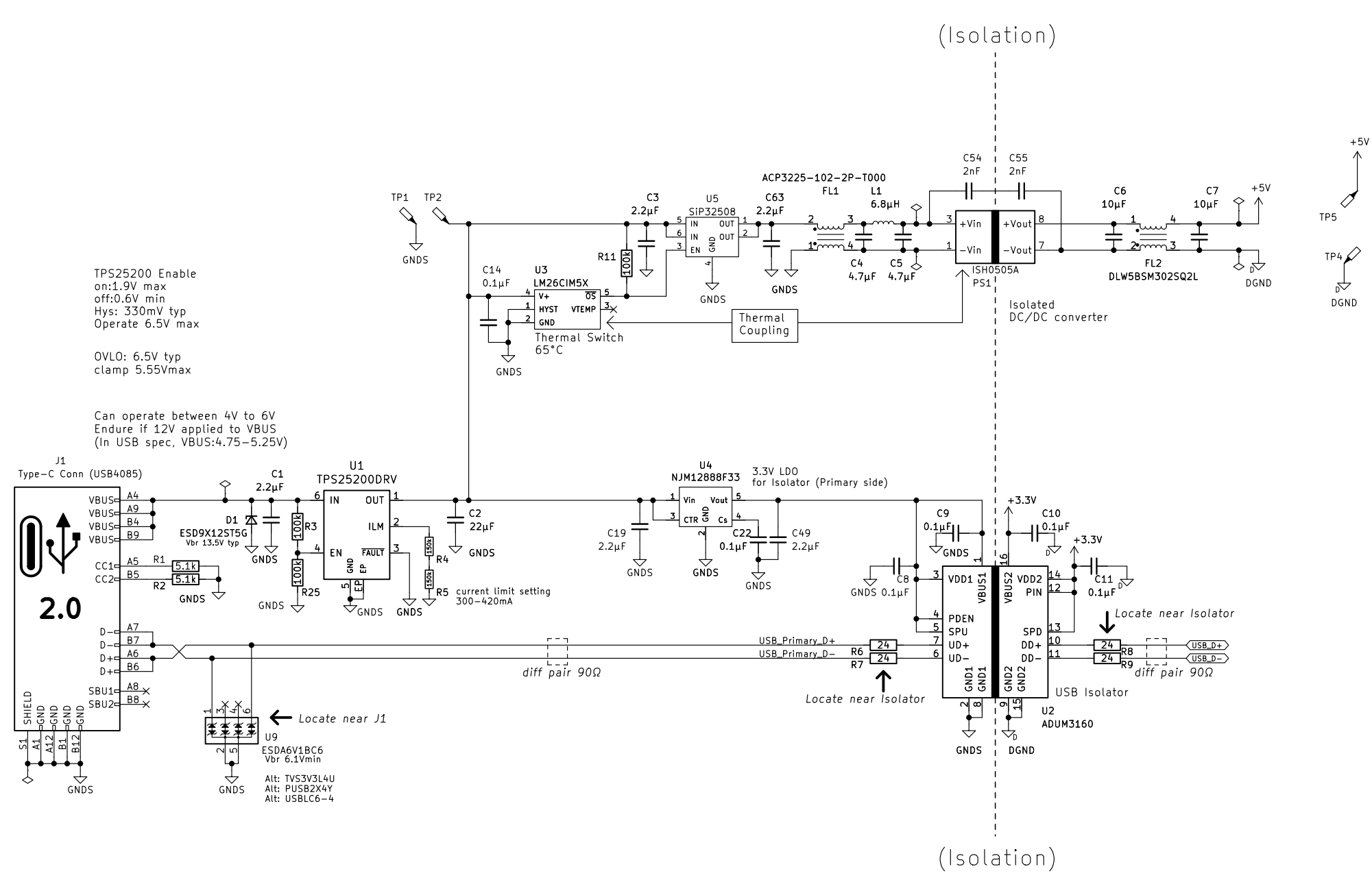
Tool: KiCad E.D.A. kicad (6.0.9)

chibi-synth with STM32H723

Block Diagram



USB and Power Block



MCU

I/O

[MCU Bypass Capacitors]

[PSRAM]

[Knobs and Switches]

Volume knob

Boot SW

Reset SW

To Display Board

Debug Conn (SWD 10P)

MIDI_IN (TRS Type A)

MCU Pinout:

Pin	Signal	Pin	Signal
PA0	34	PC10	111
PA1	35	PC11	112
PA2	36	PC12	113
PA3	37	PC13	7
PA4	40	PC14	8
PA5	41	PC15	9
PA6	42	PD0	114
PA7	43	PD1	115
PA8	100	PD2	116
PA9	101	PD3	117
PA10	102	PD4	118
PA11	103	PD5	119
PA12	104	PD6	122
PA13	105	PD7	123
PA14	109	PD8	77
PA15	110	PD9	78
PB0	46	PD10	79
PB1	47	PD11	80
PB2	48	PD12	81
PB3	133	PD13	82
PB4	134	PD14	85
PB5	135	PD15	86
PB6	136	PE0	141
PB7	137	PE1	142
PB8	139	PE2	1
PB9	140	PE3	2
PB10	69	PE4	3
PB11	70	PE5	4
PB12	73	PE6	5
PB13	74	PE7	58
PB14	75	PE8	59
PB15	76	PE9	60
PC0	26	PE10	63
PC1	27	PE11	64
PC2_C	28	PE12	65
PC3_C	29	PE13	66
PC4	44	PE14	67
PC5	45	PE15	68
PC6	96	PF0	10
PC7	97	PF1	11
PC8	98	PF2	12
PC9	99	PF3	13
OLED_CLK	111	PF4	14
OLED_MOSI	112	PF5	15
OLED_CS	127	PF6	18
OLED_RES	134	PF7	19
OLED_BK	135	PF8	20
3V3A_EN	137	PF9	21
QSPI_IO1	46	PF10	22
QSPI_IO0	47	PF11	49
QSPI_SCLK	48	PF12	50
SWDIO	105	PF13	53
SWCLK	110	PF14	54
SWDIO	105	PF15	55
SWCLK	110		

CureSynth mini main board

Date: 2023-01-03 (Rev:E5) Tool: KiCad E.D.A. kicad (6.0.9)

chibi-synth with STM32H723

MCU

[MCU Bypass Capacitors]

[PSRAM]

[Knobs and Switches]

I/O

CureSynth mini main board
 Date: 2023-01-03 (Rev:E5) | Tool: KiCad E.D.A. kicad (6.0.9)
 chibi-synth with STM32H723

MCU

[MCU Bypass Capacitors]

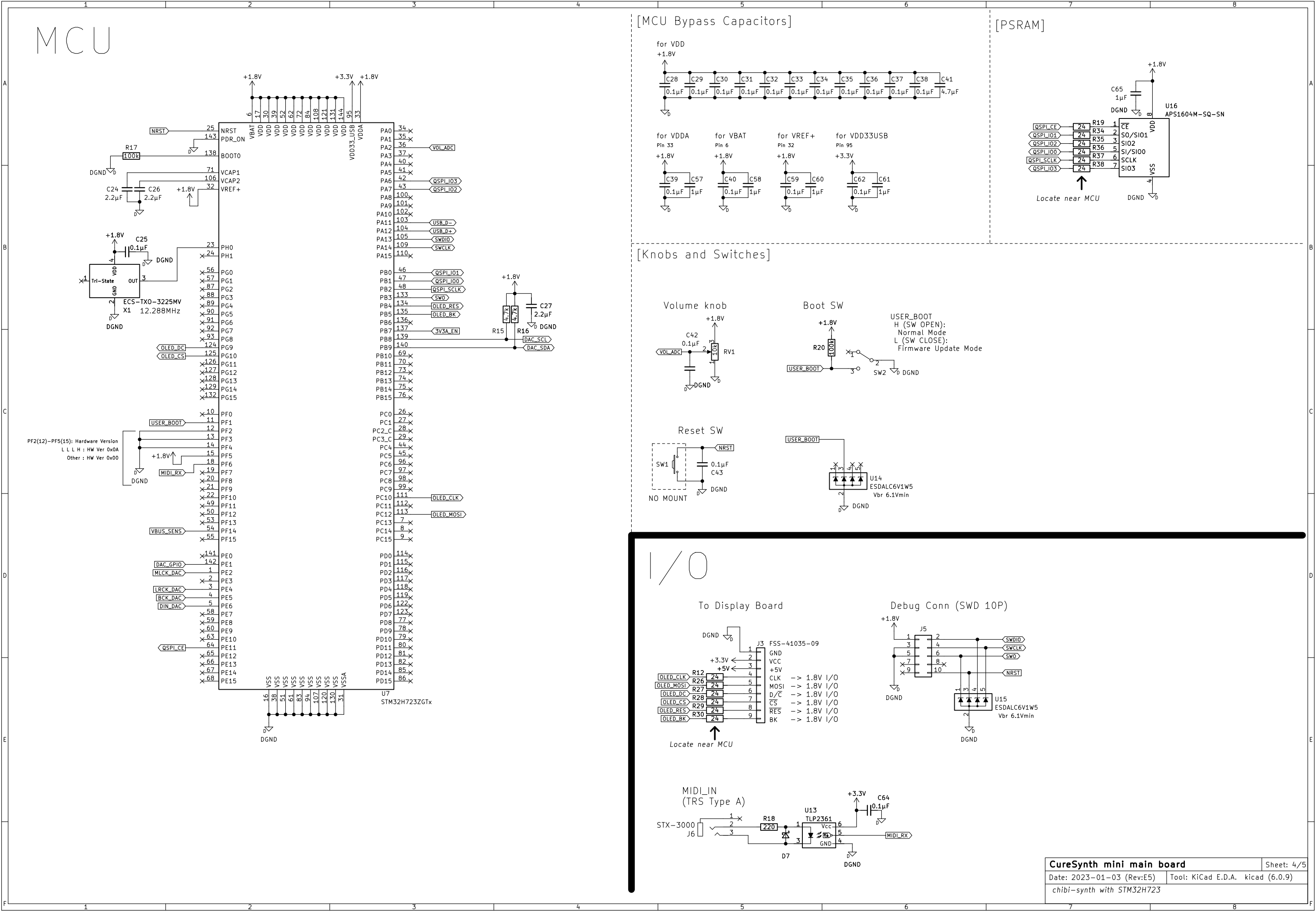
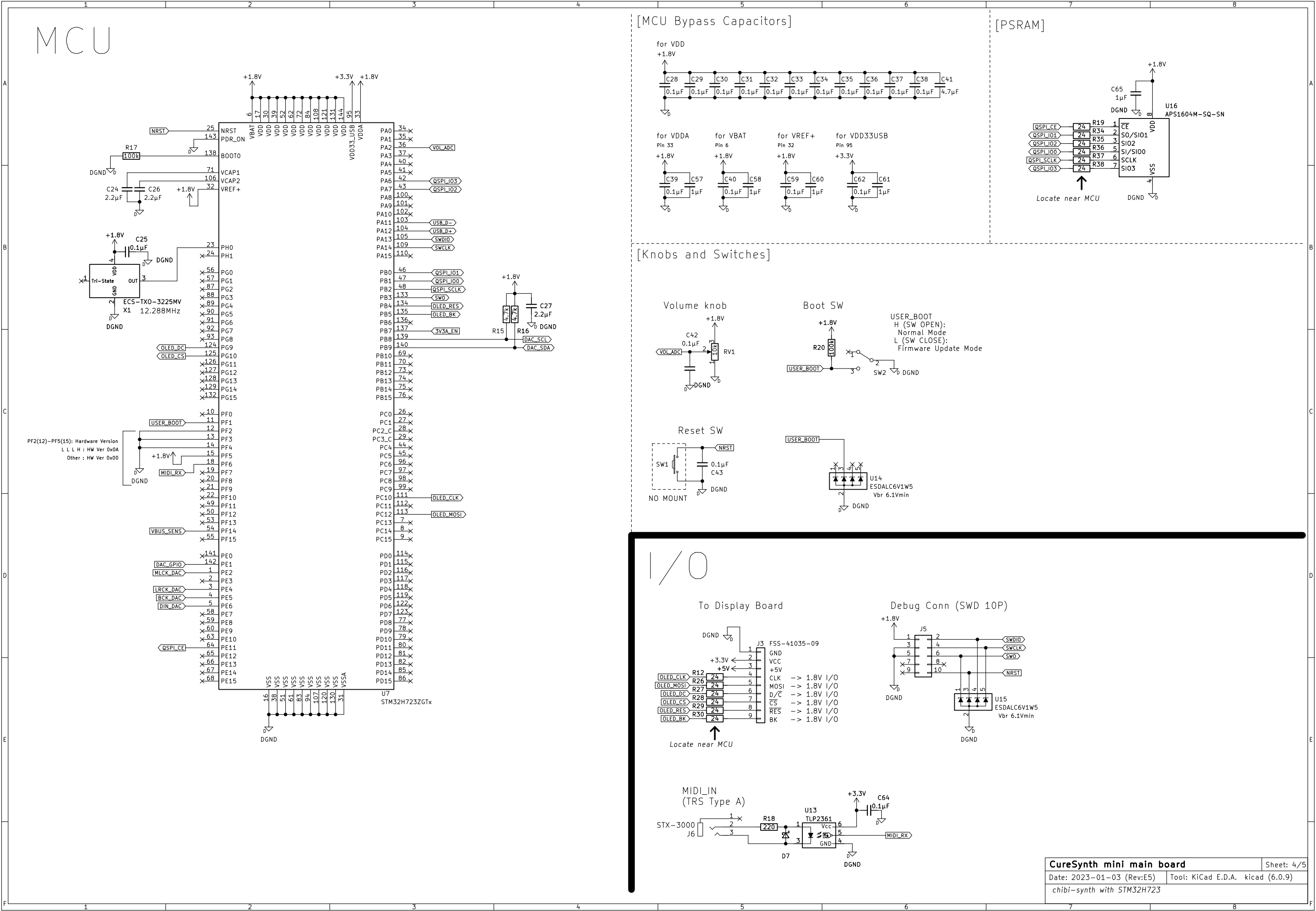
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[Knobs and Switches]

I/O

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PA7	43	PD1	115
PA8	100	PD2	116
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PA11	103	PD5	119
PA12	104	PD6	122
PA13	105	PD7	123
PA14	109	PD8	77
PA15	110	PD9	78
PB0	46	PD10	79
PB1	47	PD11	80
PB2	48	PD12	81
PB3	133	PD13	82
PB4	134	PD14	85
PB5	135	PD15	86
PB6	136		
PB7	137		
PB8	139		
PB9	140		
PB10	69		
PB11	70		
PB12	73		
PB13	74		
PB14	75		
PB15	76		
PC0	26		
PC1	27		
PC2_C	28		
PC3_C	29		
PC4	44		
PC5	45		
PC6	96		
PC7	97		
PC8	98		
PC9	99		
PC10	111		
PC11	112		
PC12	113		
PC13	7		
PC14	8		
PC15	9		
PD0	114		
PD1	115		
PD2	116		
PD3	117		
PD4	118		
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MCU

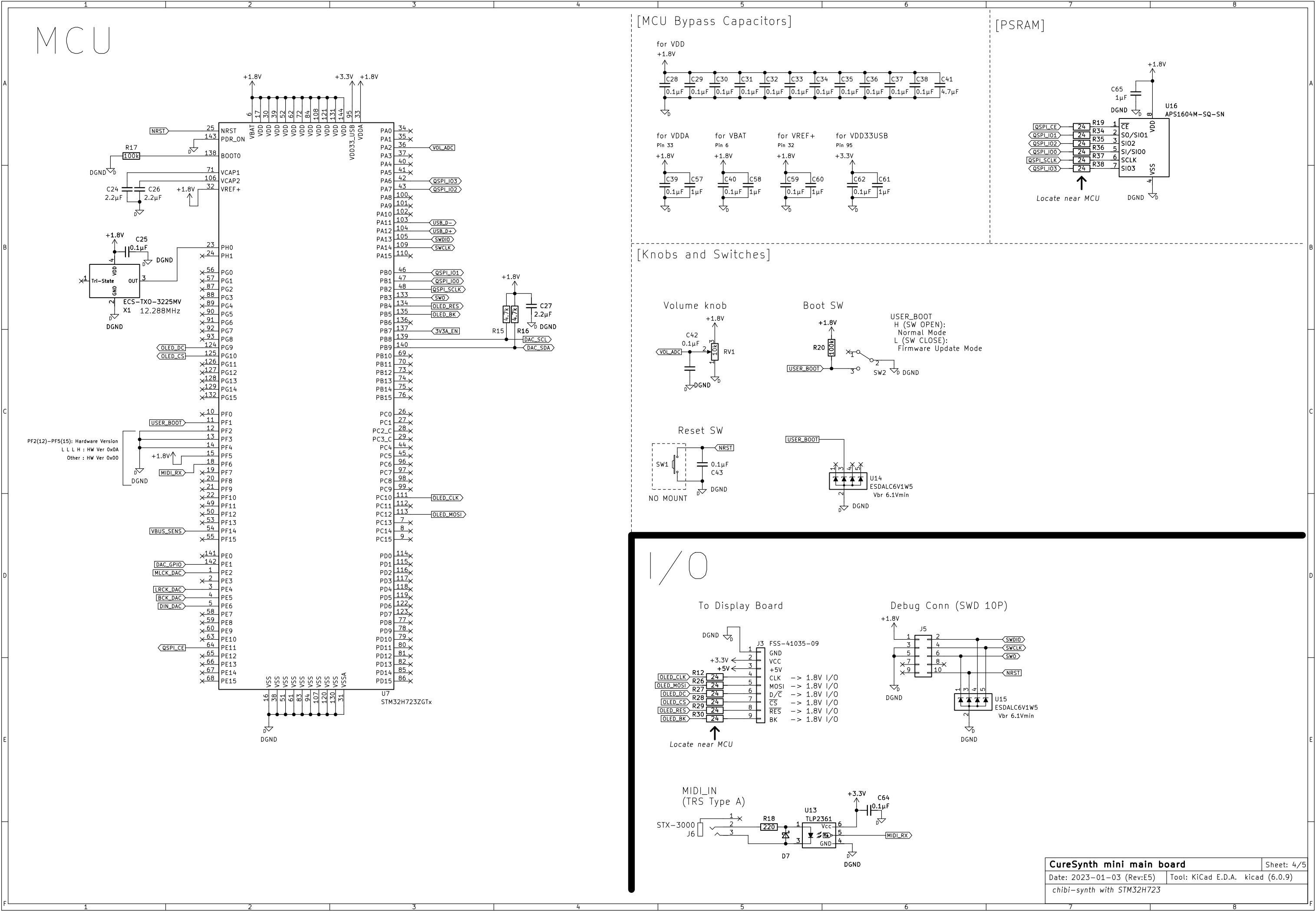
[MCU Bypass Capacitors]

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I/O

CureSynth mini main board
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 chibi-synth with STM32H723



MCU

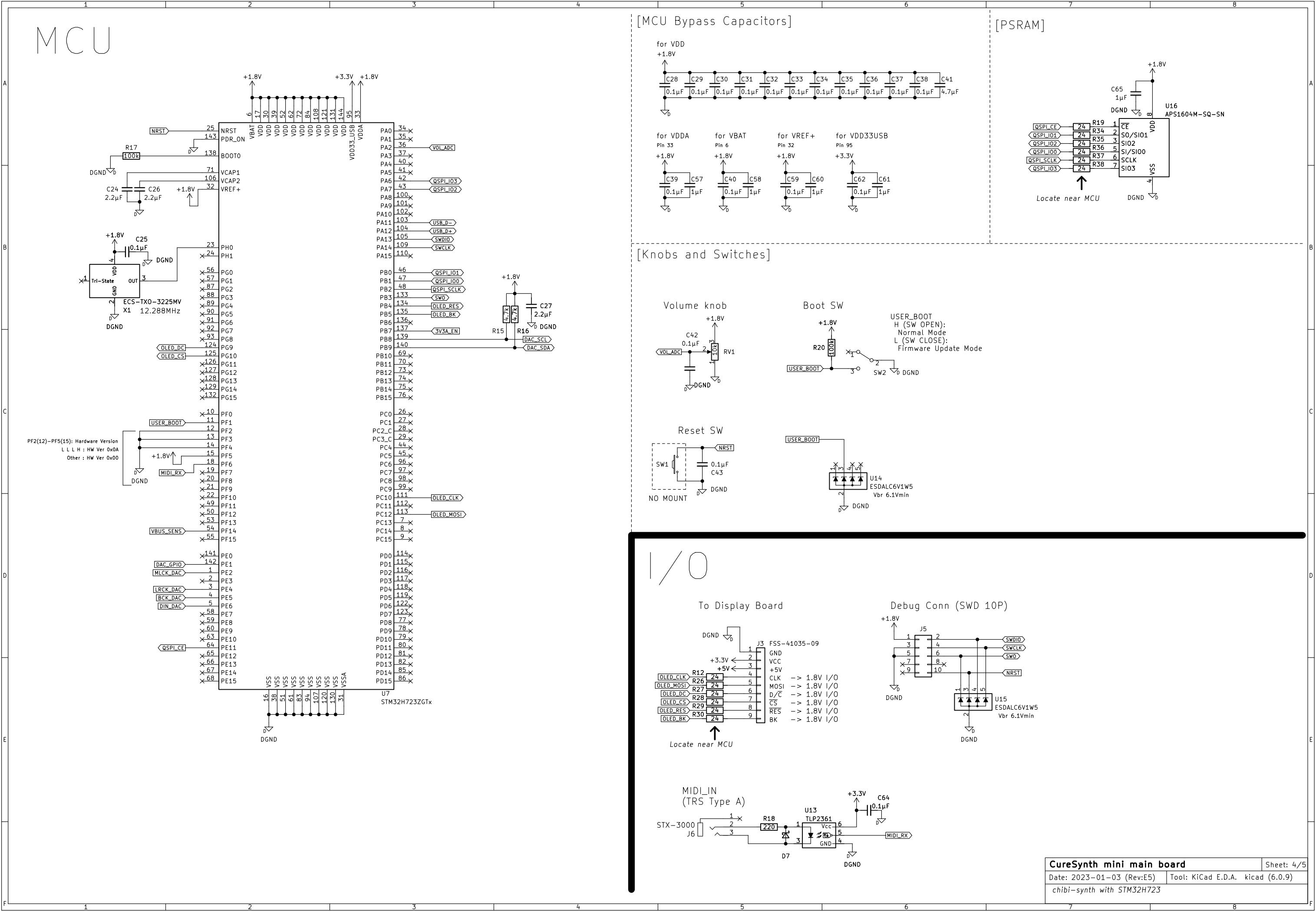
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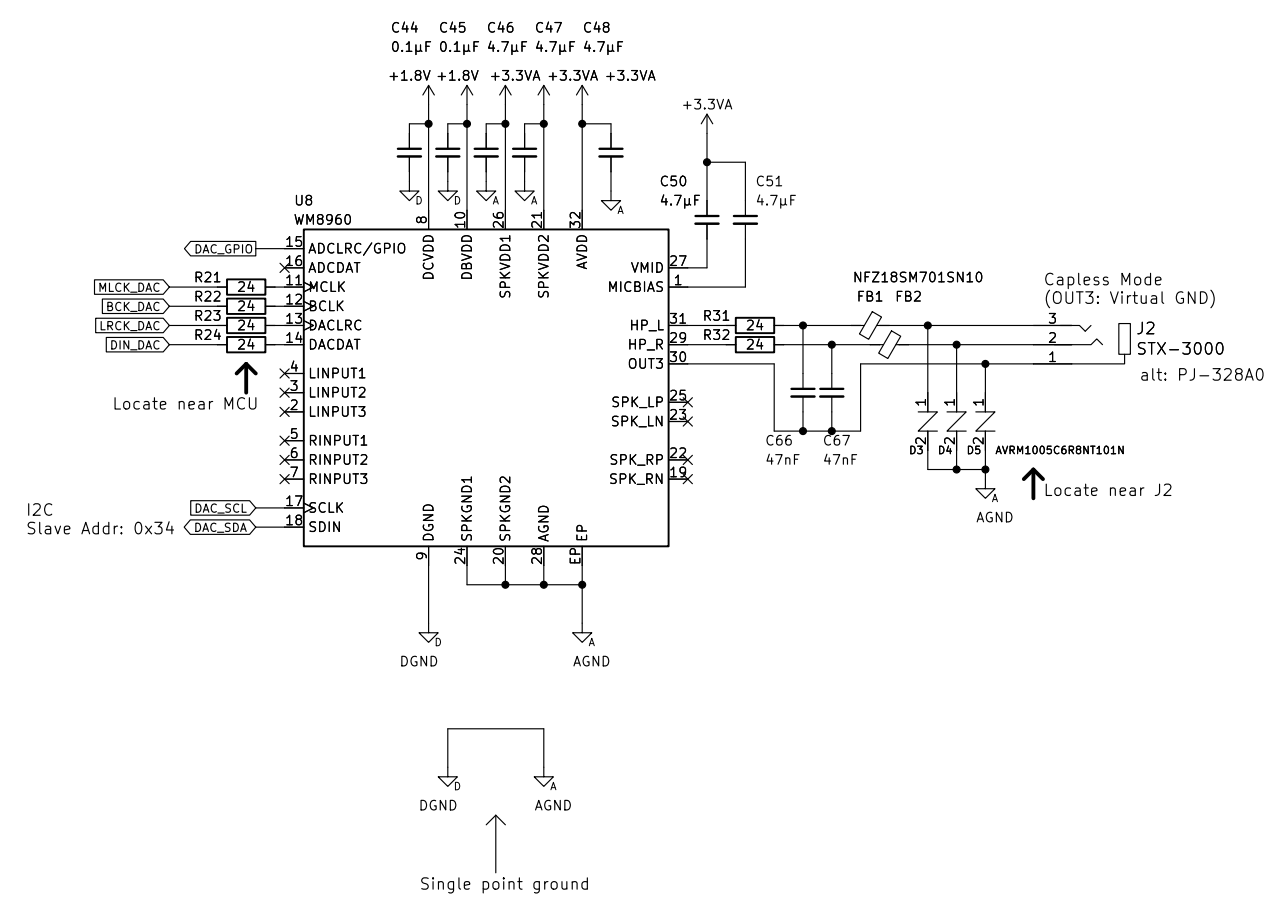
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Audio Out



Misc.

Mounting hole to case
M3



Mounting hole to sub pcb
M2



Logo Mark

